

Refugio Incident Preliminary Air Monitoring Summary May 20, 2015

This report discusses air monitoring data recorded by CTEH® from May 20, 2015 02:29 to May 20, 2015 15:24 in support of response operations conducted at the Refugio Incident near Gaviota, CA.

CTEH® conducted real-time air monitoring along the beach at locations accessible by either remediation workers or community members. Real-time air monitoring was performed for general volatile organic compounds (VOCs), benzene, hydrogen sulfide (H₂S), and lower explosive limit (LEL) using hand-held instruments such as the RAE™ Systems MultiRAE Plus, the MultiRAE Pro, the UltraRAE 3000, and Gastec™ pumps with chemical-specific colorimetric tubes. Data collected using hand-held instruments is provided in Table 1. Maps depicting handheld real-time air monitoring and analytical air sampling locations are included as attachments.

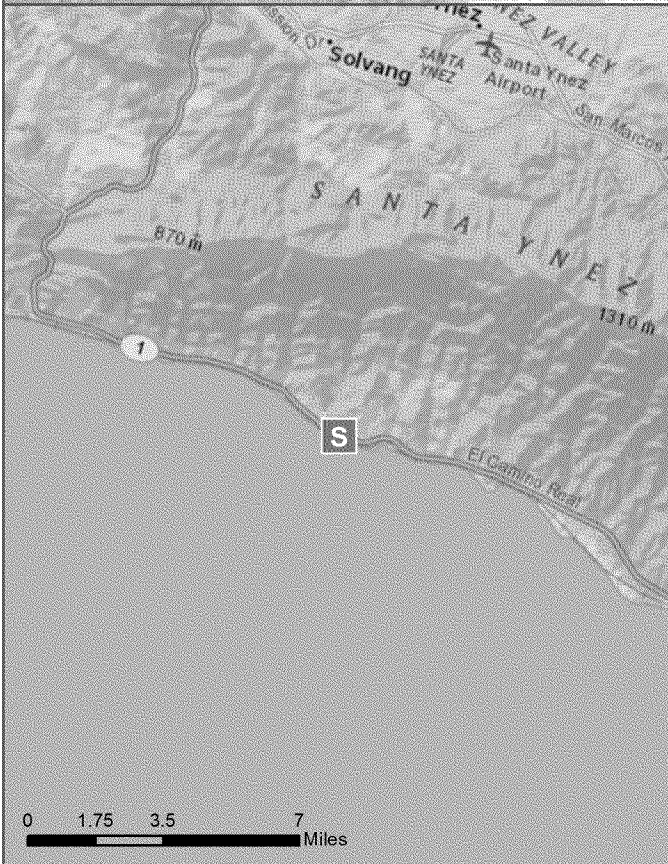
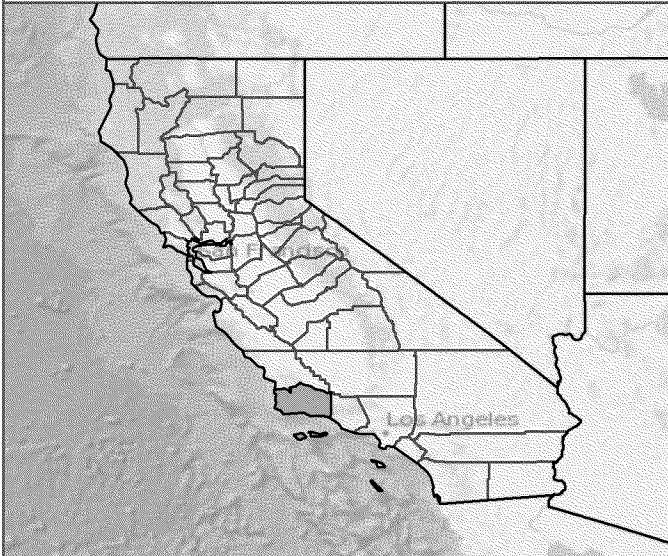
Table 1: Handheld Real-time Air Monitoring Summary*
05/20/2015 02:29 – 05/20/2015 15:24

Analyte	Instrument	No. of Readings	No. of Detections	Range of Detections**
Benzene	UltraRAE 3000	62	0	< 0.05 ppm
	Gastec 121L	1	0	< 0.05 ppm
H ₂ S	MultiRAE Plus	2	0	< 1 ppm
	MultiRAE Pro	40	0	< 0.1 ppm
LEL	MultiRAE Pro	23	0	< 1 %
VOCs***	MultiRAE Plus	5	0	< 0.1 ppm
	MultiRAE Pro	74	5	0.1 – 0.2 ppm

* Table is based on preliminary real-time data. As such, information provided has not yet undergone the complete QA/QC process and is subject to change.

** If detections were not observed, the instrument detection limit is listed in this column.

*** The chemical class of Volatile Organic Compounds (VOCs) includes, but is not limited to, crude oil associated compounds such as benzene, toluene, ethyl benzene, xylene, and hexane. Analytical sampling for a subset of VOCs is ongoing.



Legend

S Incident Site

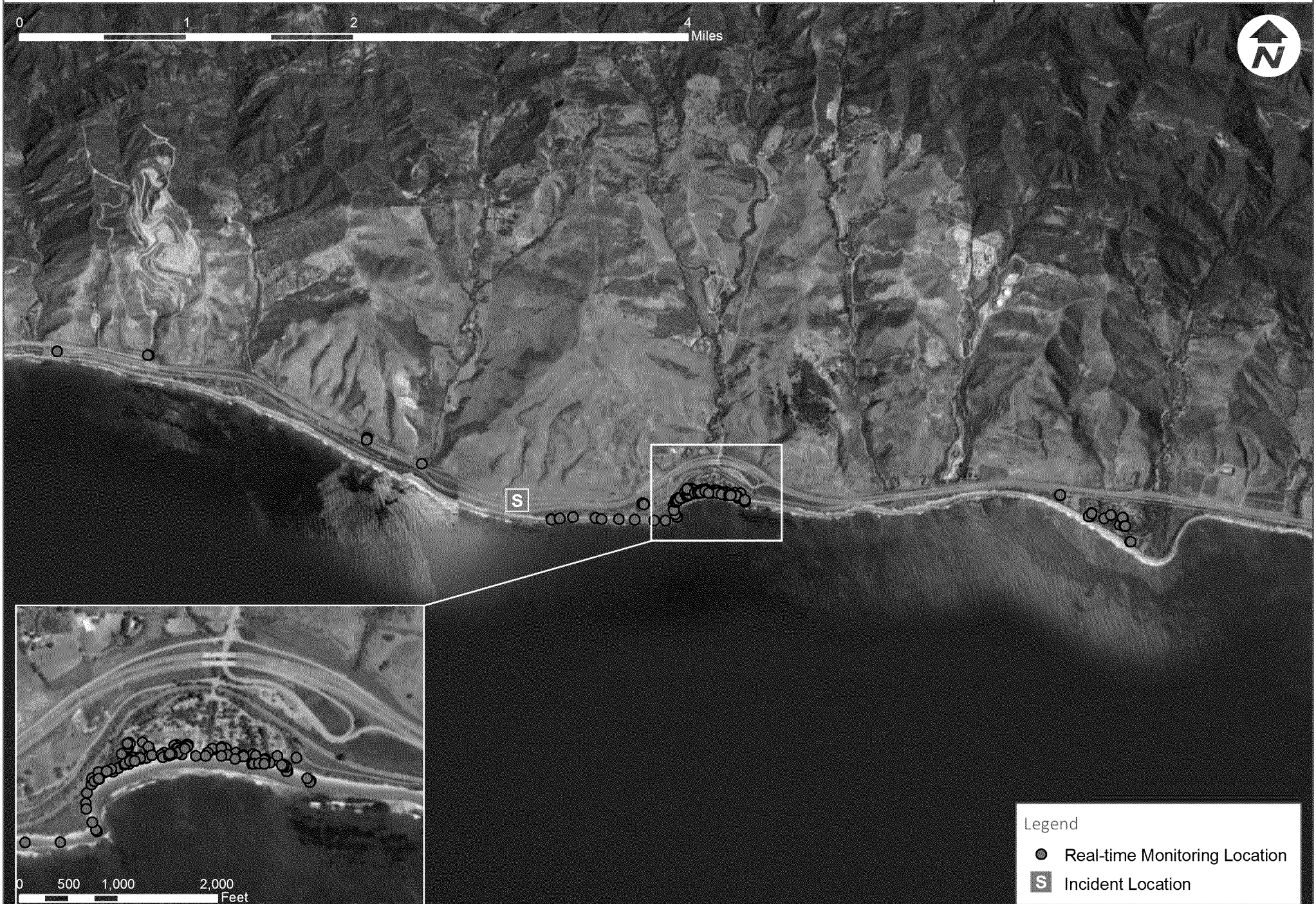


Manually-Logged Real-Time Readings

Refugio Incident | May 20, 2015 02:29 to May 20, 2015 15:24

Project: 107292
Client: Plains All American Pipeline
City: Gaviota, CA
County: Santa Barbara

0 1 2 4 Miles



Legend

- Real-time Monitoring Location
- S Incident Location



Analytical Air Sampling Locations

Refugio Incident | May 20, 2015

Project: 107292
Client: Plains All American Pipeline
City: Gaviota, CA
County: Santa Barbara

0 1 2 4 Miles



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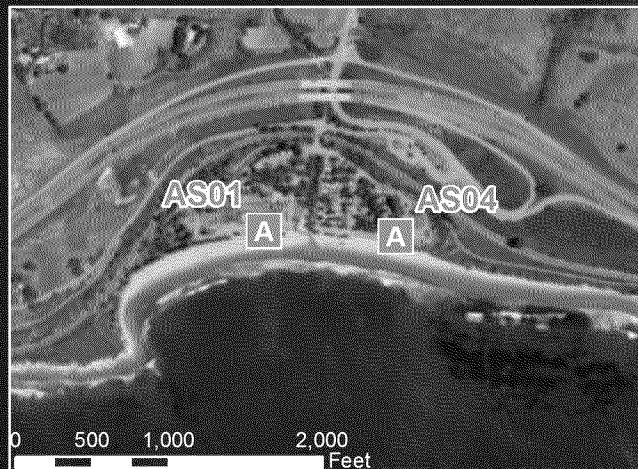
AS03
A
S

AS01
A A

AS04
A

AS05
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AS06
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Legend

- A Analytical Air Sampling Location
- S Incident Location